CURRICULUM VITAE
Jennifer L. Lewicki

Address: Earth Sciences Division
Lawrence Berkeley National Laboratory
1 Cyclotron Rd., MS 90-1116
Berkeley, CA 94720
Work Phone: 510-495-2818
e-mail: jllewicki@lbl.gov

Education:

Ph.D. Degree in Geoscience, May, 2002.
The Pennsylvania State University, University Park, PA.
Advisor: Professor Susan L. Brantley.
Thesis Title: "Soil CO_2 Flow Associated with the San Andreas and Calaveras Faults, California".

M.S. Degree in Geology, Aug, 1997.
Arizona State University, Tempe, AZ.
Advisor: Professor Stanley N. Williams.
Thesis Title: "Geochemical and Isotopic Variation in Fumarolic Gases and Thermal Waters from Cumbal Volcano, Colombia".

B.A. Degree in Geology, May, 1994.
Hamilton College, Clinton, NY.
Cum Laude.
Advisor: Professor David G. Bailey.
Thesis Title: "Mineralogical and Geochemical Variation in Andesites from Imbabura and Puluagua Volcanoes, Northern Ecuador".

School for International Training, Quito, Ecuador. (Jan-May 93)

Research Interests:

- Near-surface monitoring of geologic carbon storage sites for CO_2 leakage using integrated field measurements and geostatistical methods
- Geothermal exploration and monitoring and volcano monitoring based on gas flux, chemistry, and isotopic composition
- Role of meteorological forcing in vadose zone gas transport and associated spatio-temporal variations in surface gas fluxes

- Integration of diffuse gas flux, electromagnetic, and hydrologic measurements in volcanic and geothermal systems to understand fluid flow processes

Professional Experience:

Geological Research Scientist, Earth Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA. (May 07-present)

Geological Scientist, Earth Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA. (Jan 06-Apr 07)

Geological Sciences Postdoctoral Fellow, Earth Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA. (Jun 03-Dec 05)

Postdoctoral Fellow, Dept. of Geology, University of South Florida, Tampa, FL. (Jun 02-May 03)

Visiting Instructor, Dept. of Geology, Bucknell University, Lewisburg, PA. (Aug-Dec 00)

Visiting Scientist, Osservatorio Vesuviano, Naples, Italy. (Jun-Aug 99)

Publications:

Journal Articles

1. Male, E.J., W.L. Pickles, E.I. Silver, G.D. Hoffmann, J. Lewicki, M. Apple, K. Repasky, and E.A. Burton, Using hyperspectral plant signatures for leak detection during the 2008 ZERT CO_2 sequestration field experiment in Bozeman, MT. *Environmental Earth Sciences*, doi: 10.1007/s12665-009-0372-2, 2010.

2. Lewicki, J.L. and G.E. Hilley, Eddy covariance mapping and quantification of surface CO_2 leakage fluxes. *Geophysical Research Letters*, *36*, L21802, doi:10.1029/2009GL040775, 2009.

3. Lewicki, J. L., G.E. Hilley, M.L. Fischer, L. Pan, C.M. Oldenburg, L. Dobeck, and L. Spangler, Eddy covariance observations of surface leakage during shallow subsurface CO_2 releases, *Journal of Geophysical Research - Atmospheres*, *114,* D12302, doi:10.1029/2008JD011297, 2009.

4. Lewicki, J. L., G.E. Hilley, L. Dobeck, and L. Spangler, Dynamics of CO_2 fluxes and concentrations during a shallow subsurface CO_2 release, *Environmental Earth Sciences*, doi:, 10.1007/s12665-009-0396-7, 2009.

5. Spangler, L.H., L.M. Dobeck, K.S. Repasky, et.al., A shallow subsurface controlled release facility in Bozeman, MT, USA, for testing near surface CO_2 detection techniques and transport models. *Environmental Earth Sciences*, doi: 10.1007/s12665-009-0400-2, 2009.

6. Oldenburg, C.M., J.L. Lewicki, L. Dobeck, and L. Spangler, Modeling gas transport in the shallow subsurface during the ZERT CO_2 release test, *Transport in Porous Media*, doi:10.10007/s11242-009-9361-x, 2009.

7. Lewicki, J. L., M.L. Fischer, and G.E. Hilley, Six-week time series of eddy covariance CO_2 flux at Mammoth Mountain, California: performance evaluation and role of meteorological forcing, *Journal of Volcanology and Geothermal Research, 171*, 178-190, doi:10.1016/j.jvolgeores.2007.11.029, 2008.

8. Lewicki, J.L., C.M. Oldenburg, L. Dobeck, and L. Spangler, Surface CO_2 leakage during two shallow subsurface CO_2 releases, *Geophysical Research Letters, 34*, L24402, doi:101029/2007GL032047, 2007.

9. Lewicki, J.L., G.E. Hilley, T. Tosha, R. Aoyagi, K. Yamamoto, and S.M. Benson, Dynamic coupling of volcanic CO_2 flow and wind at the Horseshoe Lake tree kill, Mammoth Mountain, California, *Geophysical Research Letters, 34*, L03401, doi:10.1029/2006GL028848, 2007.

10. Lewicki, J.L., J.T. Birkholzer, and C.-F. Tsang, Natural and industrial analogues for leakage of CO_2 from storage reservoirs: identification of features, events, and processes and lessons learned, *Environmental Geology, 52*, doi:10.1007/s00254-006-0479-7, 2007.

11. Oldenburg, C.M. and J.L. Lewicki, On leakage and seepage of CO_2 from geologic storage sites into surface water, *Environmental Geology, 50*, 691–705, doi:10.1007/s00254-006-0242-0, 2006.

12. Bryant, J.A., G.M. Yogodzinski, M.L. Hall, J.L. Lewicki, and D.G. Bailey, Geochemical constraints on the origin of volcanic rocks from the Andean Northern Volcanic Zone, Ecuador*, Journal of Petrology*, doi:10.1093/petrology/egl006, 2006.

13. Lewicki, J.L., G.E. Hilley, and C.M. Oldenburg, An improved strategy to detect CO_2 leakage for verification of geologic carbon sequestration, *Geophysical Research Letters, 32 (19)*, L19403, doi:10.1029/2005GL024281, 2005.

14. Lewicki, J.L., D. Bergfeld, C. Cardellini, G. Chiodini, D. Granieri, N. Varley, and C. Werner, Comparative soil CO_2 flux measurements and geostatistical estimation methods on Masaya volcano, Nicaragua, *Bulletin of Volcanology, 68*, 76-90, doi: 10.1007/s00445-005-0423-9, 2005.

15. Wardell, L.J., P. Delmelle, T. Fischer, J.L. Lewicki, E. Malavassi, J. Stix, and W. Strauch, Volcanic gas workshop fosters international focus on state of the art measurement techniques, *Eos (Transactions, American Geophysical Union), 84(47),* 519, 2003.

16. Lewicki, J.L., C. Connor, K. St-Amand, J. Stix, and W. Spinner, Self-potential, soil CO_2 flux, and temperature on Masaya volcano, Nicaragua, *Geophysical Research Letters, 30,* 1817, 2003.

17. Lewicki, J.L., W.C. Evans, G.E. Hilley, M.L. Sorey, J.D. Rogie, and S.L. Brantley, Shallow soil CO_2 flow along the San Andreas and Calaveras faults, California, *Journal of Geophysical Research - Solid Earth, 108*, 2187, doi:10.1029/2002JB002141, 2003.

18. Cardellini, C., G. Chiodini, F. Frondini, D. Granieri, J. Lewicki, and L. Peruzzi, Accumulation chamber measurements of methane fluxes: application to volcanic-geothermal areas and landfills, *Applied Geochemistry, 18*, 45-54, 2003.

19. Lewicki, J.L., T. Fischer, and S.N. Williams, Chemical and isotopic compositions of fluids at Cumbal volcano, Colombia: evidence for magmatic contribution, *Bulletin of Volcanology, 62*, 347-361, 2000.

20. Lewicki, J.L. and S.L. Brantley, CO_2 degassing along the San Andreas fault, Parkfield, California, *Geophysical Research Letters, 27*, 5-8, 2000.

Conference Proceedings

1. Lewicki, J.L., G.E. Hilley, M.L. Fischer, L. Pan, C.M. Oldenburg, L. Dobeck, and L. Spangler. Detection of CO_2 leakage by eddy covariance during the ZERT project's CO_2 release experiments. *Energy Procedia, 1*, 2301-2306, 2009.

2. Dobson, P., E. Sonnenthal, J. Lewicki, and M. Kennedy, Evaluation of C-14 as a natural tracer for injected fluids at the Aidlin sector of The Geysers geothermal system through modeling of mineral-water-gas reactions, Proceedings, *TOUGH Symposium 2006*, LBNL, Berkeley, CA, May 15-17, 2006.

3. Lewicki, J.L., G.E. Hilley, and C.M. Oldenburg, An improved strategy to detect CO_2 leakage for verification of geologic carbon sequestration, *8th International Conference on Greenhouse Gas Control Technologies*, 2006.

4. Yamamoto, K., H. Koide, T. Tosha, R. Aoyagi, S. Nakanishi, N. Todaka, S. Benson, J. Rutqvist, and J. Lewicki, Natural analogue study for geological sequestration of CO_2 at the Matsushiro Earthquake Fault Zone, Japan: CO_2 seepage mechanism, *8th International Conference on Greenhouse Gas Control Technologies*, 2006.

5. Birkholzer, J., K. Pruess, J. Lewicki, J. Rutqvist, C.-F. Tsang, and A. Karimjee, Large releases from CO_2 storage reservoirs: analogs, scenarios, and modeling needs, *8th International Conference on Greenhouse Gas Control Technologies*, 2006.

6. Lewicki, J.L. and C.M. Oldenburg, Near-surface CO_2 monitoring and analysis to detect hidden geothermal systems, *Proceedings, Thirtieth Workshop on Geothermal Reservoir Engineering*, Stanford University, Stanford, California, 2005.

7. Oldenburg, C.M. and J.L. Lewicki, Leakage and seepage in the near-surface environment: an integrated approach to monitoring and detection, *7th International Conference on Greenhouse Gas Control Technologies*, 2004.

8. Lewicki, J.L., G.E. Hilley, and C. Connor, The scaling relationship between self-potential and fluid flow on Masaya volcano, Nicaragua, in *Water-Rock Interaction*, edited by R.B. Wanty and R.R. Seal II, pp. 153-156, Taylor and Francis Group, London, ISBN 90 5809 6416, 2004.

9. Lewicki, J.L. and C.M. Oldenburg, Integrated near-surface monitoring and analysis for CO_2 storage verification, *American Chemical Society National Meeting*, Division of Fuel Chemistry, 2004.

Technical Reports

1. Lewicki, J.L., J.T. Birkholzer, and C.-F. Tsang, Natural and industrial analogs for leakage of CO_2 from storage reservoirs: identification of features, events, and processes and lessons learned, *Lawrence Berkeley National Laboratory Report LBNL-59784*, 2006.

2. Oldenburg, C.M. and J.L. Lewicki, Leakage and seepage of CO_2 from geologic carbon sequestration sites: CO_2 migration into surface water, *Lawrence Berkeley National Laboratory Report LBNL-57768*, 2005.

3. Benson, S.M., et al., GEO-SEQ Best Practices Manual. Geologic Carbon Dioxide Sequestration: Site Evaluation to Implementation, *Lawrence Berkeley National Laboratory Report LBNL-56623*, 2004.

4. Lewicki, J.L. and C.M. Oldenburg, Strategies for detecting hidden geothermal systems by near-surface gas monitoring, *Lawrence Berkeley National Laboratory Report LBNL-56895*, 2004.

5. Oldenburg, C.M., J.L. Lewicki, and R.P. Hepple, Near-surface monitoring strategies for carbon dioxide storage verification, *Lawrence Berkeley National Laboratory Report LBNL-54089*, 2003.

6. Oldenburg, C.M., A.A.J. Unger, Y. Zhang, and J.L. Lewicki, CO_2 capture project - An integrated, collaborative technology development project for next generation CO_2 separation, capture and geologic sequestration, *Lawrence Berkeley National Laboratory Report LBNL-54411*, 2003.

7. Oldenburg, C.M., Y. Zhang, J.L. Lewicki, and P.D. Jordan, Preliminary application of a coupled modeling framework for CO_2 leakage and seepage at the Rio Vista gas field, *Lawrence Berkeley National Laboratory Report LBNL-54051*, 2003.